

ABSTRACT OF THE DISCLOSURE

Hitherto, there was a problem involving that the VF and IR characteristics of a Schottky barrier diode were in a tradeoff relationship, and an increase in leak current was unavoidable to implement low VF. In some preferred embodiments, a plurality of P⁺-type orthohexagonal semiconductor regions are provided in a Schottky junction region. Since they are spaced from one another equidistantly, depletion layers are spread from the P⁺-type semiconductor regions when a reverse voltage is applied, and are fully filled in an epitaxial layer. As a result, a leak current occurring at the Schottky junction interface can be prevented from leaking to the cathode side. Even when a high leak current occurs, it can be intercepted by the depletion layers, so that the tradeoff relationship between VF and IR can be eliminated. Thus, a low VF can be implemented without consideration for IR.